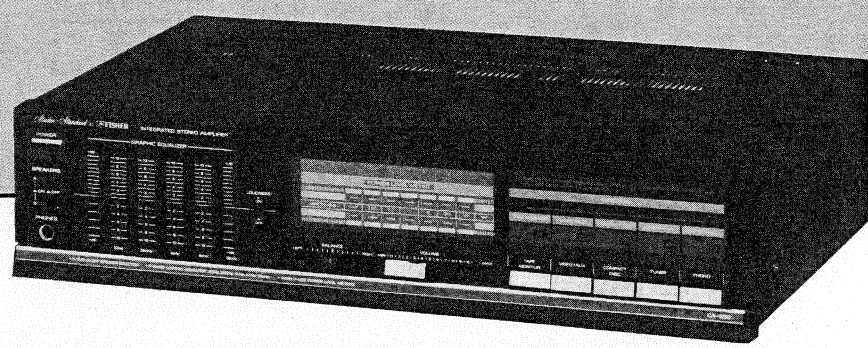
SERVICE MANUAL

FISHER

CA-863

Integrated Stereo Amplifier

(EUROPE)



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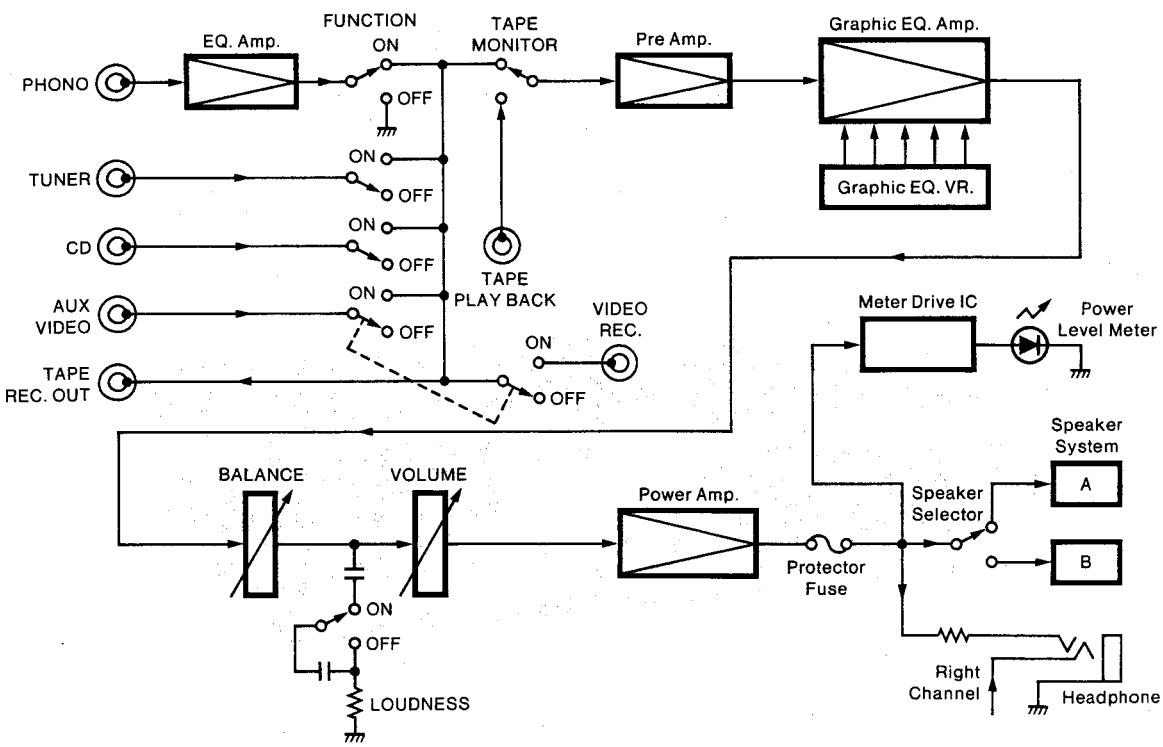
FUNCTIONAL BLOCK DIAGRAM

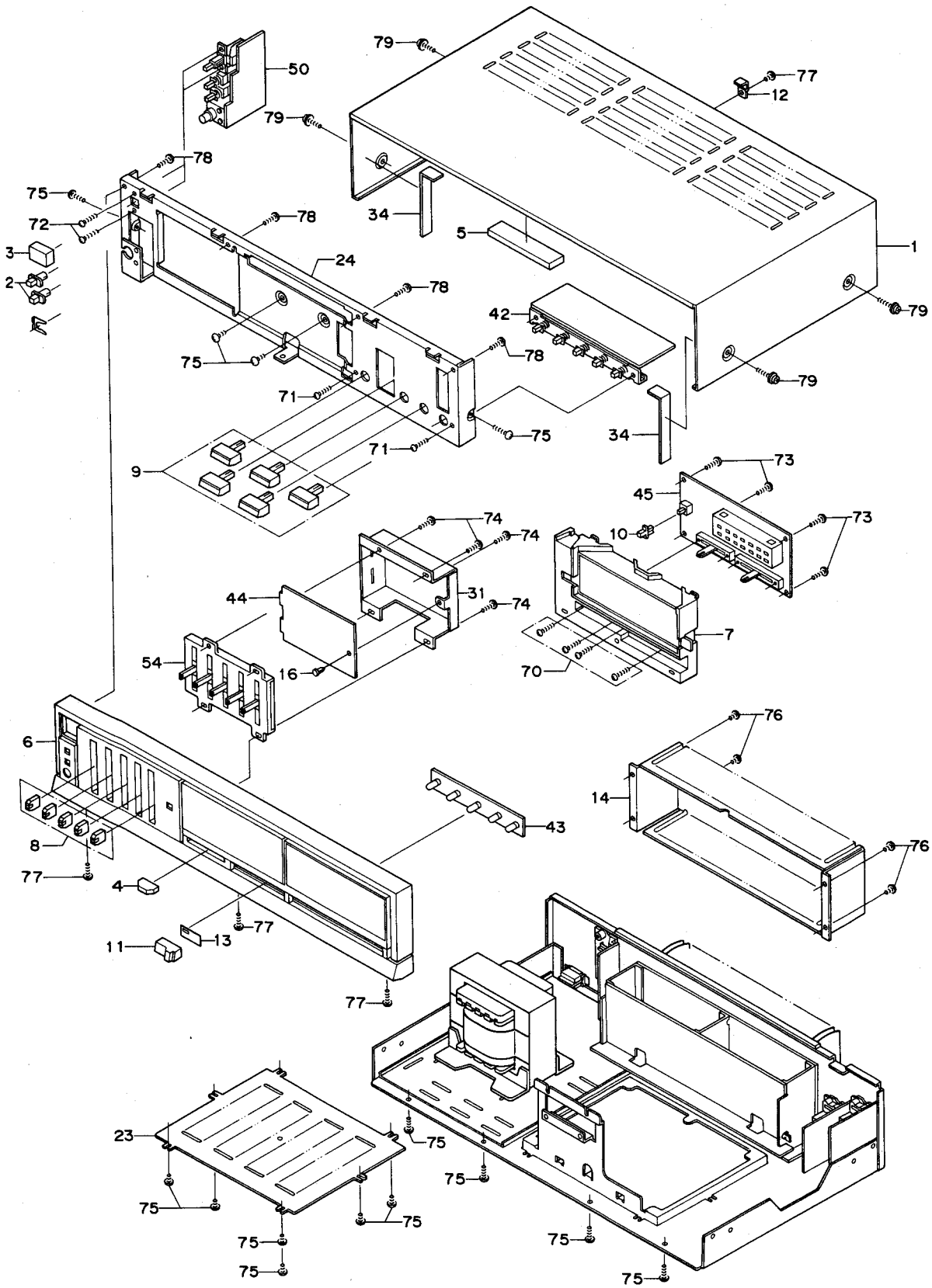


SPECIFICATIONS

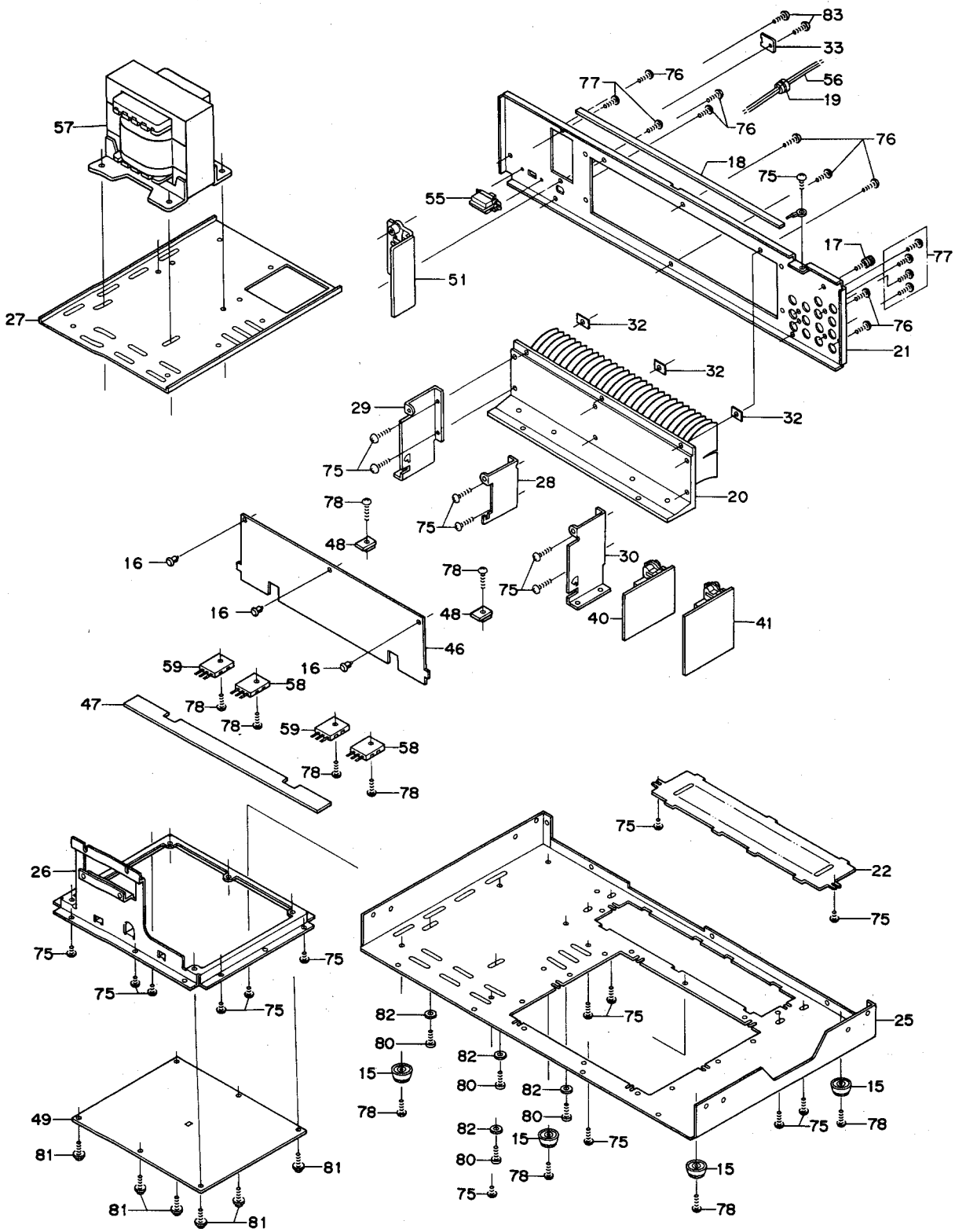
AMPLIFIER		CA-863
POWER AMPLIFIER SECTION **Minimum RMS sine wave power per channel within stated bandwidth at no more than stated distortion and with 8-ohm load**		**70 Watts**
Power Bandwidth		**20 Hz – 20 kHz**
Total Harmonic Distortion		**0.05 %**
I.M. Distortion		0.05 %
Speaker Damping		> 20
PREAMPLIFIER SECTION Frequency Response	Phono (RIAA)	±1 dB
	Aux (20 Hz – 20 kHz)	±1 dB
Input Sensitivity and Impedance	Phono	2.5 mV/50 kΩ
	Tape Monitor	150 mV/50 kΩ
	Tuner/Video/Aux/CD	150 mV/50 kΩ
Phono Max. Input Capability		150 mV
Graphic Equalizer	63 Hz	±10 dB
	250 Hz	±10 dB
	1 kHz	±10 dB
	4 kHz	±10 dB
	16 kHz	±10 dB
Loudness Contour (100 Hz/10 kHz)		+8 dB/ +4 dB
Hum & Noise (IHF Short Circuit, A Network)	Phono	70 dB
	Tape Monitor	90 dB
	Tuner/Video/Aux/CD	90 dB
GENERAL Power Requirements (50 Hz)		110 / 220 V AC
Power Consumption		350 Watts
Dimensions (W x H x D)		440 x 108 x 315 mm
Weight (approx.)		7.5 kg

Because its products are subject to continuous improvement, Fisher Corporation reserves the right to modify product designs and specifications without notice and without incurring any obligation.

CABINET & CHASSIS EXPLODED VIEW (1)



CABINET & CHASSIS EXPLODED VIEW (2)



CABINET & CHASSIS PARTS LIST

Ref. No.	Part No.	Description	Q'ty
	PACKING PARTS LIST		
	3-9415-10300	Bag Polyethylene	1
	131-6-3009-36090	Pad (Sleeve)	1
	131-6-3069-16350	Patching Sheet	1
	131-6-4559-11200	Serial No. Sheet	2
	131-6-9459-00300	Rubber Band	1
	141-6-1189-12908	Box Corrugate-Exp.	1
	141-6-1469-11700	Pad (Front)	1
	141-6-1469-11800	Pad (Rear)	1
	141-6-2519-22290	Sheet Polyethylene	1
	ACCESSORIES PARTS LIST		
	131-6-2719-10401	Bag Fan	1
	142-6-4119-32914	Explanatory Booklet	1
	CABINET & CHASSIS PARTS LIST		
	4-2379-21520	Terminal Lug	1
	131-6-4559-11200	Serial No. Sheet	1
	141-2-4729-04200	Lug	1
1	131-2-1410-26504	Cover	1
2	131-2-1601-69601	Knob (Speaker Select)	2
3	131-2-1601-93300	Knob (Power Switch)	1
4	131-2-1601-93400	Knob (Balance)	1
5	131-2-5205-33300	Cushion	1
6	141-0-1129-19602	Cabinet Front Assy	1
	141-2-1129-41800	Cabinet Front	1
	141-2-1449-65005	Plate Decorate	1
	131-2-1205-28800	Decorate Plate Dial	1
	141-2-1449-61242	Plate Front	1
7	141-0-3519-25400	Mount P.C.B. Assy	1
8	141-2-1659-46201	Knob Slide (Equalizer Volume)	5
9	141-2-1659-63400	Knob Push (Function Switch)	5
10	141-2-1659-63500	Knob Push (Loudness Switch)	1
11	141-2-1659-63600	Knob Slide (Volume)	1
12	141-2-3159-03300	Bracket Cover	1
13	141-2-4469-55500	Cushion	1
14	131-2-1410-34800	Cover Heat Sink	1
15	131-2-1801-14100	Leg	4
16	131-2-4221-00600	Rivet	4
17	131-2-4201-17800	Screw Ground	1
18	131-2-5205-15800	Cushion	1
19	131-2-6111-14200	Bushing (AC Line)	1
20	131-2-6201-36600	Heat Sink	1
21	141-2-1219-36810	Panel Rear	1
22	141-2-1259-09800	Bottom Cover	1
23	141-2-1259-09900	Bottom Cover	1
24	141-2-2149-28100	Panel Front	1
25	141-2-3119-28100	Chassis	1
26	141-2-3129-06300	Sub Chassis	1
27	141-2-3159-04400	Metal Reinforce	1
28	141-2-3889-04600	Bracket P.C.B.	1
29	141-2-3889-04700	Bracket Heat Sink (Left)	1
30	141-2-3889-04701	Bracket Heat Sink (Right)	1
31	141-2-3889-04800	Bracket Mount P.C.B.	1
32	141-2-4359-41200	Plate Sever	3
33	131-2-7104-00500	Plate Pad Switch	1
34	131-2-3202-13400	Metal Reinf	2

Ref. No.	Part No.	Description	Q'ty
	ELECTRICAL PARTS LIST		
40	141-0-1939-14511	Phono EQ. P.C.B. Assy	1
41	141-0-1939-14540	Input 2 P.C.B. Assy	1
42	141-0-1939-14490	Function P.C.B. Assy	1
43	141-0-1939-14530	L.E.D. P.C.B. Assy	1
44	141-0-1939-14501	Graphic EQ. P.C.B. Assy	1
45	141-0-1939-14521	Power Meter P.C.B. Assy	1
46	141-0-1939-15294	Main Amp. P.C.B. Assy	1
47	141-0-1939-14391	Power Transistor P.C.B. Assy	1
48	141-0-1939-14400	Bias P.C.B. Assy	2
49	141-0-1939-15303	Power Supply P.C.B. Assy	1
50	141-0-1939-15454	Power Switch P.C.B. Assy	1
51	141-0-1939-14431	Speaker Out P.C.B. Assy	1
54	4-2229-76230	Slide Volume SW-250kΩx5	1
55	⚠ 4-2312-01020	Switch Slide (AC Selector) [SW801]	1
56	⚠ 4-2432-00200	Power Cord	1
57	⚠ 4-2512-23123	Power Trans	1
58	4-2039-71310	Transistor, 2SC 3182 **(Q1, Q2)**	2
59	4-2039-71320	Transistor, 2SA 1265 **(Q3, Q4)**	2
	SCREW PARTS LIST		
70	101-3-1302-00418	Screw, Pan Hd., +M2.0x4	4
71	101-3-1303-00611	Screw, Pan Hd., +M3.0x6	2
72	131-3-1303-00611	Screw, Pan Hd. C SW, +M3.0x6	2
73	143-3-1902-60811	Screw, Brazier Hd. Tapping-B, +M2.6x8	4
74	143-3-1902-61011	Screw, Brazier Hd. Tapping-B, +M2.6x10	4
75	143-3-1903-00611	Screw, Brazier Hd. Tapping-B, +M3.0x6	35
76	143-3-1903-00618	Screw, Brazier Hd. Tapping-B, +M3.0x6	12
77	143-3-1903-00818	Screw, Brazier Hd. Tapping-B, +M3.0x8	10
78	143-3-1903-01011	Screw, Brazier Hd. Tapping-B, +M3.0x10	14
79	141-2-4219-38400	Screw, Bind Hd. Tapping-B, +M4.0x8 Sems	4
80	131-2-4201-27802	Screw, (C Tite)	4
81	131-2-4201-25201	Screw, Brazier Hd. Tapping-B, +M3.0x8 Sems	6
82	131-2-4203-84200	Washer, 4.2x12x1.0 Z	4
83	101-3-1703-00818	Screw, Bind Hd., +M3.0x8	2

C801	CC4-7-3500-ZG00C	Ceramic	0.047μF	50V +80,-20%	1

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

RECOMMENDED TEST EQUIPMENTS

The following test equipments are recommended to completely test and align the Amplifier:

- Line Voltage Isolation Transformer
- AC DC Multimeter
- Accurately Calibrated AC Voltmeter
- Oscilloscope (Flat to 100 kHz Minimum)
- Low-Distortion Audio Sine-Wave Generator
- Harmonic Distortion Analyzer
- Two (2) Load Resistors 8-ohms, 250 Watts (Minimum Rating)

HARMONIC DISTORTION TEST

CAUTION: Limit the following tests to no more than ten minutes each. Use 8-ohm resistors, with a minimum power rating of 250 watts when connecting a load across the SPEAKERS terminal.

CONTROL SETTINGS:

Unplug the AC power cord and set the front panel controls as follows:

- POWER switch to the OFF position.
- SPEAKERS switch to the OFF position.
- GRAPHIC EQUALIZER to the center position.
- BALANCE control to the center position.
- FUNCTION switch to the VIDEO/AUX position.
- VOLUME control to the MINIMUM position.
- LEFT CHANNEL DRIVEN

ONE CHANNEL DRIVEN:

1) Connect a low distortion audio generator to LEFT AUX IN jack. Set generator frequency to 1 kHz and output to minimum.

2) Connect an 8-ohm load resistor between SPEAKERS SYSTEM-A LEFT and COM terminals. Connect a Harmonic Distortion Analyzer and an AC VTVM in parallel across the 8-ohm load.

3) Connect the AC power cord and set SPEAKERS switch to ON position. Turn VOLUME control to MAX.

4) Increase generator output for 100 Watts RMS (28.2 volts across the 8-ohm load). Harmonic Distortion Analyzer should measure 0.05 % distortion or less.

5) Repeat steps 1 through 4 for RIGHT CHANNEL.

BOTH CHANNELS DRIVEN

Connect 8-ohm load resistors across LEFT and RIGHT SPEAKERS SYSTEM-A terminals. Adjust generator output and "VOLUME" control for 100 watts at Left and Right Channels (28.2 volts across the 8-ohm loads). Harmonic Distortion Analyzer should measure 0.05 % distortion or less at each channel.

CAUTION: This precision high-fidelity instrument should be serviced only by qualified personnel, trained in the repair of transistor equipment and printed circuitry.

POWER AMPLIFIER ADJUSTMENT

BEFORE ADJUSTMENT

Unplug the AC power cord and set the front panel controls as follows:

- Power switch to the OFF position.
- Set the SPEAKERS switch to the OFF position.
- Turn the MASTER VOLUME control to the position marked 0 (minimum).
- IDLING CURRENT ADJUSTMENT VR401/VR402 (on the Main Amplifier P.C.Borad) setting to mechanical center position.
- Connect the AC power cord and Power switch to the ON position.

IDLING CURRENT ADJUSTMENT

This adjustment is very sensitive to changes in ambient temperature. Allow set to operate for 5 minutes before attempting this adjustment.

LEFT CHANNEL AMPLIFIER

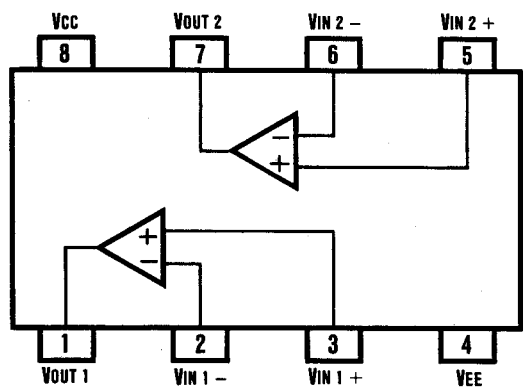
1) Connect the DC Voltmeter between Pins T404 and T403 on the Main Amplifier P.C.Board.
2) Adjust the VR401 for an indication of 15mV ±5mV on the DC Voltmeter.

RIGHT CHANNEL AMPLIFIER

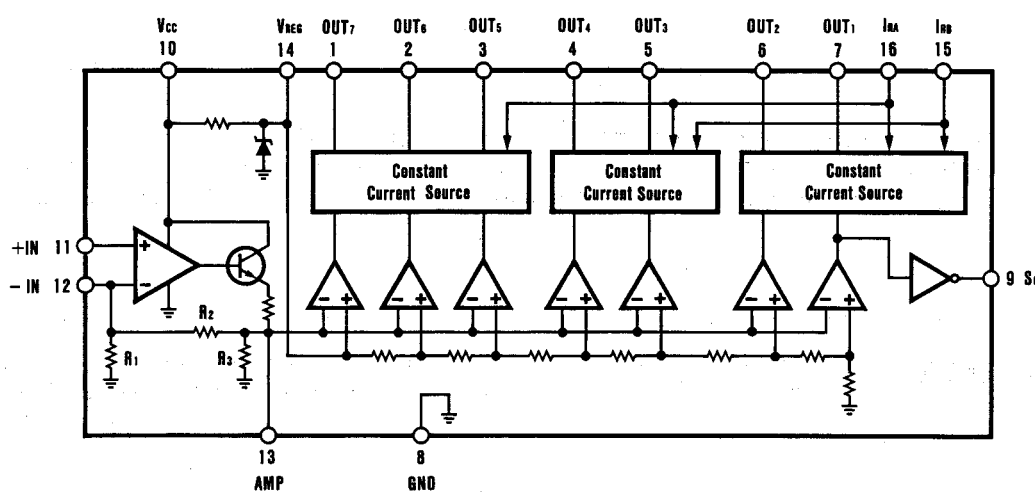
1) Connect the DC Voltmeter between Pins T402 and T401 on the Main Amplifier P.C.Board.
2) Adjust the VR402 for an indication of 15mV ±5mV on the DC Voltmeter.

INTEGRATED CIRCUIT BLOCK DIAGRAM

PHONO / GRAPHIC EQUALIZER AMP IC NJM 2068 DD / LA 6458 D



LED METER DRIVE AMP IC IR 2 E 29



P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description				Q'ty
	PHONO EQ. P.C.B. ASSY					
40	141-0-1939-14511	Phono EQ. P.C.B. Assy				1
	4-2262-26430	Phono EQ. P.C.B.				1
	4-2352-01650	Pin Jack 4P (Phono, Tuner)				1
	4-2352-01650	Pin Jack 4P (CD, Video/Aux)				1
	CAPACITORS					
C101	CC3-3-1500-KD00C	Ceramic	330pF	50V	±10%	1
C102	CC3-3-1500-KD00C	Ceramic	330pF	50V	±10%	1
C103	CC3-3-1500-KD00C	Ceramic	330pF	50V	±10%	1
C104	CC3-3-1500-KD00C	Ceramic	330pF	50V	±10%	1
C105	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1
C106	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1
C107	CC2-2-1500-KD00C	Ceramic	220pF	50V	±10%	1
C108	CC2-2-1500-KD00C	Ceramic	220pF	50V	±10%	1
C111	CD4-7-6160-0001V	Electrolytic	47μF	16V		1
C112	CD4-7-6160-0001V	Electrolytic	47μF	16V		1
C113	CM1-8-3500-K00SV	Mylar	0.018μF	50V	±10%	1
C114	CM1-8-3500-K00SV	Mylar	0.018μF	50V	±10%	1
C115	CM4-7-2500-K00SV	Mylar	0.0047μF	50V	±10%	1
C116	CM4-7-2500-K00SV	Mylar	0.0047μF	50V	±10%	1
C117	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1
C118	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1
C119	CC2-2-1500-KD00C	Ceramic	220pF	50V	±10%	1
C120	CC2-2-1500-KD00C	Ceramic	220pF	50V	±10%	1
C145	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V	+80,-20%	1
C148	CD4-7-6160-0001V	Electrolytic	47μF	16V		1
C149	CD4-7-6160-0001V	Electrolytic	47μF	16V		1
	SEMICONDUCTOR					
IC101	4-2069-75310	IC, NJM 2068 DD				1
	RESISTORS					
R101	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R102	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R103	RD1-0-4161-JH000	Carbon	100kΩ	1/6W	±5%	1
R104	RD1-0-4161-JH000	Carbon	100kΩ	1/6W	±5%	1
R105	RD1-0-4161-JH000	Carbon	100kΩ	1/6W	±5%	1
R106	RD1-0-4161-JH000	Carbon	100kΩ	1/6W	±5%	1
R107	RD3-3-1161-JH000	Carbon	330Ω	1/6W	±5%	1
R108	RD3-3-1161-JH000	Carbon	330Ω	1/6W	±5%	1
R109	RD2-2-4161-JH000	Carbon	220kΩ	1/6W	±5%	1
R110	RD2-2-4161-JH000	Carbon	220kΩ	1/6W	±5%	1
R111	RD1-5-3161-JH000	Carbon	15kΩ	1/6W	±5%	1
R112	RD1-5-3161-JH000	Carbon	15kΩ	1/6W	±5%	1
R113	RD1-0-4161-JH000	Carbon	100kΩ	1/6W	±5%	1
R114	RD1-0-4161-JH000	Carbon	100kΩ	1/6W	±5%	1
R115	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R116	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R117	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R118	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R119	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R120	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R121	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R122	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R129	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R130	RD1-0-2251-JM000	Carbon	1kΩ	1/4W	±5%	1
	INPUT 2 P.C.B. ASSY					
41	141-0-1939-14540	Input 2 P.C.B. Assy				1
	4-2262-26460	Input 2 P.C.B.				1
	4-2359-78651	Pin Jack 6P (Tape, Video)				1

Ref. No.	Part No.	Description				Q'ty
	RESISTORS					
R123	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R124	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R125	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R126	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R127	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R128	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
	FUNCTION P.C.B. ASSY					
42	141-0-1939-14490	Function P.C.B. Assy				1
	4-2262-26410	Function P.C.B.				1
S301	4-2319-78790	Push Switch 5Key (Function)				1
D	4-2369-73674	Plug 5P				1
	RESISORS					
R301	RD1-0-2251-JM000	Carbon	1kΩ	1/4W	±5%	1
R302	RD2-2-2251-JM000	Carbon	2.2kΩ	1/4W	±5%	1
	L.E.D. P.C.B. ASSY					
43	141-0-1939-14530	L.E.D. P.C.B. Assy				1
	4-2262-26450	L.E.D. P.C.B.				1
	131-2-4208-28000	Spacer				5
	SEMICONDUCTORS					
D302	DYY---SLR--54PT-	L.E.D., SLR 54 PT (Phono)				1
D303	DYY---SLR--54PT-	L.E.D., SLR 54 PT (Tuner)				1
D304	DYY---SLR--54PT-	L.E.D., SLR 54 PT (Compact Disk)				1
D305	DYY---SLR--54PT-	L.E.D., SLR 54 PT (Video/Aux)				1
D306	DYY---SLR--54VT-	L.E.D., SLR 54 VT (Tape Monitor)				1
	GRAPHIC EQ. P.C.B. ASSY					
44	141-0-1939-14501	Graphic EQ. P.C.B. Assy				1
	4-2262-26420	Graphic EQ. P.C.B.				1
D	131-0-4006-31411	Cord Assy				1
E	4-2369-73670	Plug 3P				1
G	4-2369-73672	Plug 2P				1
Y	4-2359-78820	Socket Jumper 8P				1
Z	4-2359-78820	Socket Jumper 8P				1
	CAPACITORS					
C201	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C202	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C203	CC1-0-1500-KD00C	Ceramic	100pF	50V	±10%	1
C204	CC1-0-1500-KD00C	Ceramic	100pF	50V	±10%	1
C205	CC6-8-0500-KD00C	Ceramic	68pF	50V	±10%	1
C206	CC6-8-0500-KD00C	Ceramic	68pF	50V	±10%	1
C207	CC1-0-0500-DD00C	Ceramic	10pF	50V	±0.5%	1
C208	CC1-0-0500-DD00C	Ceramic	10pF	50V	±0.5%	1
C209	CD1-0-6160-0001V	Electrolytic	10μF	16V		1
C210	CD1-0-6160-0001V	Electrolytic	10μF	16V		1
C211	CD2-2-6250-0001V	Electrolytic	22μF	25V		1
C212	CD2-2-6250-0001V	Electrolytic	22μF	25V		1
C213	CC2-2-1500-KD00C	Ceramic	220pF	50V	±10%	1
C214	CC2-2-1500-KD00C	Ceramic	220pF	50V	±10%	1
C215	CM1-8-3500-K00SV	Mylar	0.018μF	50V	±10%	1
C216	CM1-8-3500-K00SV	Mylar	0.018μF	50V	±10%	1
C217	CD2-2-5500-0001V	Electrolytic	2.2μF	50V		1
C218	CD2-2-5500-0001V	Electrolytic	2.2μF	50V		1
C219	CM8-2-2500-K00SV	Mylar	0.0082μF	50V	±10%	1
C220	CM8-2-2500-K00SV	Mylar	0.0082μF	50V	±10%	1
C221	CD3-3-4500-0001V	Electrolytic	0.33μF	50V		1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
C222	CD3-3-4500-0001V	Electrolytic	0.33μF	50V		1
C223	CM4-7-2500-K00SV	Mylar	0.0047μF	50V	±10%	1
C224	CM4-7-2500-K00SV	Mylar	0.0047μF	50V	±10%	1
C225	CM8-2-3500-J00TV	Mylar	0.082μF	50V	±5%	1
C226	CM8-2-3500-J00TV	Mylar	0.082μF	50V	±5%	1
C227	CM1-5-2500-K00SV	Mylar	0.0015μF	50V	±10%	1
C228	CM1-5-2500-K00SV	Mylar	0.0015μF	50V	±10%	1
C229	CM2-2-3500-K00SV	Mylar	0.022μF	50V	±10%	1
C230	CM2-2-3500-K00SV	Mylar	0.022μF	50V	±10%	1
C231	CC6-8-1500-KE00C	Ceramic	680pF	50V	±10%	1
C232	CC6-8-1500-KE00C	Ceramic	680pF	50V	±10%	1
C233	CM4-7-2500-K00SV	Mylar	0.0047μF	50V	±10%	1
C234	CM4-7-2500-K00SV	Mylar	0.0047μF	50V	±10%	1
C239	CD4-7-6250-0001V	Electrolytic	47μF	25V		1
C240	CD4-7-6250-0001V	Electrolytic	47μF	25V		1
	SEMICONDUCTORS					
D215	202-5-3210-12012	Zener Diode, GZA 12 Y				1
IC201	206-5-2726-45810	IC, LA 6458 DS				1
Q201	203-5-5000-53660	Transistor, 2SC 536				1
Q202	203-5-5000-53660	Transistor, 2SC 536				1
Q203	203-5-5000-53660	Transistor, 2SC 536				1
Q204	203-5-5000-53660	Transistor, 2SC 536				1
Q205	203-5-5000-53660	Transistor, 2SC 536				1
Q206	203-5-5000-53660	Transistor, 2SC 536				1
Q207	203-5-5000-53660	Transistor, 2SC 536				1
Q208	203-5-5000-53660	Transistor, 2SC 536				1
Q209	203-5-5000-53660	Transistor, 2SC 536				1
Q210	203-5-5000-53660	Transistor, 2SC 536				1
	RESISTORS					
R201	RD1-5-2161-JH000	Carbon	1.5kΩ	1/6W	±5%	1
R202	RD1-5-2161-JH000	Carbon	1.5kΩ	1/6W	±5%	1
R203	RD5-6-3161-JH000	Carbon	56kΩ	1/6W	±5%	1
R204	RD5-6-3161-JH000	Carbon	56kΩ	1/6W	±5%	1
R205	RD2-7-2161-JH000	Carbon	2.7kΩ	1/6W	±5%	1
R206	RD2-7-2161-JH000	Carbon	2.7kΩ	1/6W	±5%	1
R207	RD4-7-2161-JH000	Carbon	4.7kΩ	1/6W	±5%	1
R208	RD4-7-2161-JH000	Carbon	4.7kΩ	1/6W	±5%	1
R209	RD3-3-2161-JH000	Carbon	3.3kΩ	1/6W	±5%	1
R210	RD3-3-2161-JH000	Carbon	3.3kΩ	1/6W	±5%	1
R211	RD5-6-2161-JH000	Carbon	5.6kΩ	1/6W	±5%	1
R212	RD5-6-2161-JH000	Carbon	5.6kΩ	1/6W	±5%	1
R213	RD4-7-2161-JH000	Carbon	4.7kΩ	1/6W	±5%	1
R214	RD4-7-2161-JH000	Carbon	4.7kΩ	1/6W	±5%	1
R215	RD1-2-2161-JH000	Carbon	1.2kΩ	1/6W	±5%	1
R216	RD1-2-2161-JH000	Carbon	1.2kΩ	1/6W	±5%	1
R217	RD1-5-4161-JH000	Carbon	150kΩ	1/6W	±5%	1
R218	RD1-5-4161-JH000	Carbon	150kΩ	1/6W	±5%	1
R219	RD1-5-3161-JH000	Carbon	15kΩ	1/6W	±5%	1
R220	RD1-5-3161-JH000	Carbon	15kΩ	1/6W	±5%	1
R221	RD3-9-1161-JH000	Carbon	390Ω	1/6W	±5%	1
R222	RD3-9-1161-JH000	Carbon	390Ω	1/6W	±5%	1
R223	RD1-5-2161-JH000	Carbon	1.5kΩ	1/6W	±5%	1
R224	RD1-5-2161-JH000	Carbon	1.5kΩ	1/6W	±5%	1
R225	RD1-0-4161-JH000	Carbon	100kΩ	1/6W	±5%	1
R226	RD1-0-4161-JH000	Carbon	100kΩ	1/6W	±5%	1
R227	RD1-5-3161-JH000	Carbon	15kΩ	1/6W	±5%	1
R228	RD1-5-3161-JH000	Carbon	15kΩ	1/6W	±5%	1
R229	RD3-9-1161-JH000	Carbon	390Ω	1/6W	±5%	1
R230	RD3-9-1161-JH000	Carbon	390Ω	1/6W	±5%	1
R231	RD1-5-2161-JH000	Carbon	1.5kΩ	1/6W	±5%	1
R232	RD1-5-2161-JH000	Carbon	1.5kΩ	1/6W	±5%	1
R233	RD3-9-3161-JH000	Carbon	39kΩ	1/6W	±5%	1

Ref. No.	Part No.	Description				Q'ty
R234	RD3-9-3161-JH000	Carbon	39kΩ	1/6W	±5%	1
R235	RD1-5-3161-JH000	Carbon	15kΩ	1/6W	±5%	1
R236	RD1-5-3161-JH000	Carbon	15kΩ	1/6W	±5%	1
R237	RD3-9-1161-JH000	Carbon	390Ω	1/6W	±5%	1
R238	RD3-9-1161-JH000	Carbon	390Ω	1/6W	±5%	1
R239	RD1-5-2161-JH000	Carbon	1.5kΩ	1/6W	±5%	1
R240	RD1-5-2161-JH000	Carbon	1.5kΩ	1/6W	±5%	1
R241	RD3-3-3161-JH000	Carbon	33kΩ	1/6W	±5%	1
R242	RD3-3-3161-JH000	Carbon	33kΩ	1/6W	±5%	1
R243	RD1-5-3161-JH000	Carbon	15kΩ	1/6W	±5%	1
R244	RD1-5-3161-JH000	Carbon	15kΩ	1/6W	±5%	1
R245	RD3-9-1161-JH000	Carbon	390Ω	1/6W	±5%	1
R246	RD3-9-1161-JH000	Carbon	390Ω	1/6W	±5%	1
R247	RD1-5-2161-JH000	Carbon	1.5kΩ	1/6W	±5%	1
R248	RD1-5-2161-JH000	Carbon	1.5kΩ	1/6W	±5%	1
R249	RD2-2-3161-JH000	Carbon	22kΩ	1/6W	±5%	1
R250	RD2-2-3161-JH000	Carbon	22kΩ	1/6W	±5%	1
R251	RD1-5-3161-JH000	Carbon	15kΩ	1/6W	±5%	1
R252	RD1-5-3161-JH000	Carbon	15kΩ	1/6W	±5%	1
R253	RD3-9-1161-JH000	Carbon	390Ω	1/6W	±5%	1
R254	RD3-9-1161-JH000	Carbon	390Ω	1/6W	±5%	1
R261	RD5-6-A161-JH000	Carbon	5.6Ω	1/6W	±5%	1
R262	RD5-6-A161-JH000	Carbon	5.6Ω	1/6W	±5%	1
R263	RD8-2-1161-JH000	Carbon	820Ω	1/6W	±5%	1
R264	RD8-2-1161-JH000	Carbon	820Ω	1/6W	±5%	1
	POWER METER P.C.B. ASSY					
45	141-0-1939-14521	Power Meter P.C.B. Assy				1
	4-2262-26440	Power Meter P.C.B.				1
VR201	4-2229-75980	Slide Volume (W-200kΩ, Balance)				1
VR202	4-2229-76220	Slide Volume (A-100kΩx2, Volume)				1
S201	4-2319-77780	Switch Push 1Key (Loudness)				1
G	4-2359-76638	Connector 2P Assy				1
E	4-2359-77390	Connector 3P Assy				1
H	4-2359-78722	Connector 2P Assy				1
H	131-0-4006-31402	Cord Assy				1
I	131-0-4006-31404	Cord Assy				1
	141-2-2419-34300	Mount L.E.D.				1
	141-2-3769-18600	Spacer L.E.D.				1
	CAPACITORS					
C235	CC2-7-1500-KE00R	Ceramic	270pF	50V	±10%	1
C236	CC2-7-1500-KE00R	Ceramic	270pF	50V	±10%	1
C237	CM3-9-3500-K00SV	Mylar	0.039μF	50V	±10%	1
C238	CM3-9-3500-K00SV	Mylar	0.039μF	50V	±10%	1
C244	CD1-0-6250-0001V	Electrolytic	10μF	25V		1
C246	CD1-0-6250-0002V	Electrolytic	10μF	25V		1
C248	CD1-0-6250-0002V	Electrolytic	10μF	25V		1
C249	CD1-0-6250-0002V	Electrolytic	10μF	25V		1
	SEMICONDUCTORS					
D202	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D204	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D206	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D208	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D210	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D212	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
D214	D00---SLP--273B-	L.E.D., SLP 273 B (Power Level Meter)				1
IC204	4-2069-73580	IC, IR 2 E 29				1
	RESISTORS					
R255	RD6-8-2161-JH000	Carbon	6.8kΩ	1/6W	±5%	1
R256	RD6-8-2161-JH000	Carbon	6.8kΩ	1/6W	±5%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
R258	RD1-2-2161-JH000	Carbon	1.2kΩ	1/6W	±5%	1
R260	RD3-3-2161-JH000	Carbon	3.3kΩ	1/6W	±5%	1
	MAIN AMP. P.C.B. ASSY					
46	141-0-1939-15294	Main Amp. P.C.B. Assy				1
	4-2262-26301	Main Amp. P.C.B.				1
	4-2329-70440	Relay				1
	⚠ 4-2349-20550	Fuse F4.0A				2
	4-2352-01940	Fuse Clip				4
VR401	4-2229-73353	Potentiometer (B-100Ω)				1
VR402	4-2229-73353	Potentiometer (B-100Ω)				1
L401	4-2552-00650	AF Coil (2μH)				1
L402	4-2552-00650	AF Coil (2μH)				1
H	4-2369-73130	Connector 3P				1
H	4-2362-00770	Plug 2P				1
J	4-2359-79210	Connector 3P Assy				1
K	4-2359-79284	Connector 3P Assy				1
N	4-2369-75980	Plug 2P				1
	131-2-7103-52606	Label Fuse F4.0Ax2				1
	CAPACITORS					
C401	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C402	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C403	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1
C404	CD4-7-5250-0001V	Electrolytic	4.7μF	25V		1
C405	CC2-2-1500-KD00C	Ceramic	220pF	50V	±10%	1
C406	CC2-2-1500-KD00C	Ceramic	220pF	50V	±10%	1
C407	CC2-2-1500-KD00C	Ceramic	220pF	50V	±10%	1
C408	CC2-2-1500-KD00C	Ceramic	220pF	50V	±10%	1
C409	CD2-2-763A-0001V	Electrolytic	220μF	6.3V		1
C410	CD2-2-763A-0001V	Electrolytic	220μF	6.3V		1
C411	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C412	CC2-2-1500-KE00C	Ceramic	220pF	50V	±10%	1
C413	4-2239-72020	Ceramic	3pF	500V	±0.5pF	1
C414	4-2239-72020	Ceramic	3pF	500V	±0.5pF	1
C415	4-2239-71190	Capacitor	27pF	500V	±10%	1
C416	4-2239-71190	Capacitor	27pF	500V	±10%	1
C419	4-2239-71120	Capacitor	18pF	500V	±10%	1
C420	4-2239-71120	Capacitor	18pF	500V	±10%	1
C421	CM1-0-4500-J00TV	Mylar	0.1μF	50V	±5%	1
C422	CM1-0-4500-J00TV	Mylar	0.1μF	50V	±5%	1
C423	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C424	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C425	CD4-7-6630-0001V	Electrolytic	47μF	63V		1
C426	CD4-7-6630-0001V	Electrolytic	47μF	63V		1
C427	CD4-7-6630-0001V	Electrolytic	47μF	63V		1
C428	CD4-7-6630-0001V	Electrolytic	47μF	63V		1
C429	CD1-0-6250-0001V	Electrolytic	10μF	25V		1
C433	4-2239-72120	Ceramic	220pF	500V	±10%	1
C434	4-2239-72120	Ceramic	220pF	500V	±10%	1
C435	CM3-9-3500-K00SV	Mylar	0.039μF	50V	±10%	1
C436	CM3-9-3500-K00SV	Mylar	0.039μF	50V	±10%	1
C437	CI2-2-3160-NG00R	Boundary	0.022μF	16V	±30%	1
	SEMICONDUCTORS					
D401	202-5-9040-44210	Diode, DS 442				1
D402	202-5-9040-44210	Diode, DS 442				1
D403	202-5-9040-44210	Diode, DS 442				1
D404	202-5-9040-44210	Diode, DS 442				1
D405	202-5-9040-44210	Diode, DS 442				1
D406	202-5-9040-44210	Diode, DS 442				1
D407	202-5-9040-44210	Diode, DS 442				1
D408	202-5-9040-44210	Diode, DS 442				1

Ref. No.	Part No.	Description				Q'ty
D410	202-5-3210-18011	Zener Diode, GZA 18 X				1
D412	202-5-0220-01010	Diode, DSF 10 C				1
Q403	TMM---2SC1-583-F	Transistor, 2SC 1583				1
Q404	TMM---2SC1-583-F	Transistor, 2SC 1583				1
Q405	203-5-5251-57060	Transistor, 2SC 1570				1
Q406	203-5-5251-57060	Transistor, 2SC 1570				1
Q407	203-5-5251-57060	Transistor, 2SC 1570				1
Q408	203-5-5251-57060	Transistor, 2SC 1570				1
Q409	203-5-7230-60860	Transistor, 2SA 608				1
Q410	203-5-7230-60860	Transistor, 2SA 608				1
Q411	203-5-4561-01760	Transistor, 2SA 1017				1
Q412	203-5-4561-01760	Transistor, 2SA 1017				1
Q413	203-5-4542-36360	Transistor, 2SC 2363				1
Q414	203-5-4542-36360	Transistor, 2SC 2363				1
Q417	203-5-4711-24980	Transistor, 2SA 1249				1
Q418	203-5-4711-24980	Transistor, 2SA 1249				1
	RESISTORS					
R401	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R402	RD1-0-2161-JH000	Carbon	1kΩ	1/6W	±5%	1
R405	RD6-8-3161-JH000	Carbon	68kΩ	1/6W	±5%	1
R406	RD6-8-3161-JH000	Carbon	68kΩ	1/6W	±5%	1
R407	RD8-2-2251-JM000	Carbon	8.2kΩ	1/4W	±5%	1
R408	RD8-2-2251-JM000	Carbon	8.2kΩ	1/4W	±5%	1
R409	RD4-7-1161-JH000	Carbon	470Ω	1/6W	±5%	1
R410	RD4-7-1161-JH000	Carbon	470Ω	1/6W	±5%	1
R411	RD5-6-0251-JM000	Carbon	56Ω	1/4W	±5%	1
R412	RD5-6-0251-JM000	Carbon	56Ω	1/4W	±5%	1
R413	RD3-9-3251-JM000	Carbon	39kΩ	1/4W	±5%	1
R414	RD3-9-3251-JM000	Carbon	39kΩ	1/4W	±5%	1
R415	RD5-6-0251-JM000	Carbon	56Ω	1/4W	±5%	1
R416	RD5-6-0251-JM000	Carbon	56Ω	1/4W	±5%	1
R417	RD8-2-2251-JM000	Carbon	8.2kΩ	1/4W	±5%	1
R418	RD8-2-2251-JM000	Carbon	8.2kΩ	1/4W	±5%	1
R419	RD3-3-3251-JM000	Carbon	33kΩ	1/4W	±5%	1
R420	RD3-3-3251-JM000	Carbon	33kΩ	1/4W	±5%	1
R421	RD8-2-0251-JM000	Carbon	82Ω	1/4W	±5%	1
R422	RD8-2-0251-JM000	Carbon	82Ω	1/4W	±5%	1
R423	RF4-7-0251-JK000	Fuse	47Ω	1/4W	±5%	1
R424	RF4-7-0251-JK000	Fuse	47Ω	1/4W	±5%	1
R425	RD4-7-0251-JM000	Carbon	47Ω	1/4W	±5%	1
R426	RD4-7-0251-JM000	Carbon	47Ω	1/4W	±5%	1
R427	RF1-0-0251-JH000	Fuse	10Ω	1/4W	±5%	1
R428	RF1-0-0251-JK000	Fuse	10Ω	1/4W	±5%	1
R429	RF1-0-0251-JH000	Fuse	10Ω	1/4W	±5%	1
R430	RF1-0-0251-JK000	Fuse	10Ω	1/4W	±5%	1
R431	RD6-8-3251-JM000	Carbon	68kΩ	1/4W	±5%	1
R432	RD6-8-3251-JM000	Carbon	68kΩ	1/4W	±5%	1
R433	RH4-7-2102-JZ003	Metal	4.7kΩ	1W	±5%	1
R435	RF3-3-1501-JZ000	Fuse	330Ω	1/2W	±5%	1
R436	RF3-3-1501-JZ000	Fuse	330Ω	1/2W	±5%	1
R439	RF2-2-A251-JK000	Fuse	2.2Ω	1/4W	±5%	1
R440	RF2-2-A251-JH000	Fuse	2.2Ω	1/4W	±5%	1
R443	RD4-7-A251-JM000	Carbon	4.7Ω	1/4W	±5%	1
R444	RD4-7-A251-JM000	Carbon	4.7Ω	1/4W	±5%	1
R445	RH1-0-0102-JZ003	Metal	10Ω	1W	±5%	1
R446	RH1-0-0102-JZ003	Metal	10Ω	1W	±5%	1
R447	RD2-7-4251-JM000	Carbon	270kΩ	1/4W	±5%	1
R448	RD2-7-4251-JM000	Carbon	270kΩ	1/4W	±5%	1
R449	RF1-2-1251-JK000	Fuse	120Ω	1/4W	±5%	1
R471	RF8-2-0251-JH000	Fuse	82Ω	1/4W	±5%	1
R472	RF8-2-0251-JH000	Fuse	82Ω	1/4W	±5%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
	POWER TRANSISTOR P.C.B. ASSY					
47	141-0-1939-14391	Power Transistor P.C.B. Assy				1
	4-2262-26310	Power Transistor P.C.B.				1
	111-2-6220-11100	Wire Wrap Terminal				4
	CAPACITORS					
C431	4-2239-72120	Ceramic	220pF	500V	±10%	1
C432	4-2239-72120	Ceramic	220pF	500V	±10%	1
	SEMICONDUCTORS					
Q415	203-5-5143-11780	Transistor, 2SC 3117				1
Q416	203-5-5143-11780	Transistor, 2SC 3117				1
	RESISTORS					
R437	RF2-2-A251-JH000	Fuse	2.2Ω	1/4W	±5%	1
R438	RF2-2-A251-JH000	Fuse	2.2Ω	1/4W	±5%	1
R441	RH2-2-B202-JZ003	Metal	0.22Ω	2W	±5%	1
R442	RH2-2-B202-JZ003	Metal	0.22Ω	2W	±5%	1
R451	RH2-2-B202-JZ003	Metal	0.22Ω	2W	±5%	1
R452	RH2-2-B202-JZ003	Metal	0.22Ω	2W	±5%	1
	BIAS P.C.B. ASSY					
48	141-0-1939-14400	Bias P.C.B. Assy				2
	4-2262-26320	Bias P.C.B.				1
	SEMICONDUCTORS					
D409	202-5-9040-44210	Diode, DS 442				1
Q419	4-2039-72100	Transistor, 2SD 947				1
	POWER SUPPLY P.C.B. ASSY					
49	141-0-1939-15303	Power Supply P.C.B. Assy				1
	4-2262-26331	Power Supply P.C.B.				1
	⚠ 4-2349-20380	Fuse T1.0A				2
	⚠ 4-2349-21470	Fuse T5.0A				2
	4-2352-01940	Fuse Clip				8
I	4-2369-73140	Connector 4P				1
J	4-2369-75990	Plug 3P				1
K	4-2369-73130	Connector 3P				1
R	4-2439-72198	Wire 2 Parallel				1
	4-2379-21520	Terminal Lug				1
	111-2-6220-11100	Wire Wrap Terminal				7
	131-2-7103-52604	Label Fuse T1.0Ax2				1
	131-2-7103-52605	Label Fuse T5.0Ax2				1
	CAPACITORS					
C501	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V	+80,-20%	1
C502	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V	+80,-20%	1
C503	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V	+80,-20%	1
C504	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V	+80,-20%	1
C505	4-2239-72000	Electrolytic	4700μF	63V		1
C506	4-2239-72000	Electrolytic	4700μF	63V		1
C507	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V	+80,-20%	1
C508	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V	+80,-20%	1
C509	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V	+80,-20%	1
C510	CC4-7-3151-ZG00C	Ceramic	0.047μF	150V	+80,-20%	1
C511	CD4-7-7350-0001V	Electrolytic	470μF	35V		1
C512	CD4-7-7350-0001V	Electrolytic	470μF	35V		1
C513	CD1-0-7250-0001V	Electrolytic	100μF	25V		1
C515	CD1-0-6250-0001V	Electrolytic	10μF	25V		1
C516	CD1-0-8250-0001V	Electrolytic	1000μF	25V		1
C520	CD2-2-5500-0001V	Electrolytic	2.2μF	50V		1
C521	CD2-2-763A-0001V	Electrolytic	220μF	6.3V		1

Ref. No.	Part No.	Description				Q'ty
	SEMICONDUCTORS					
D503	202-5-0220-01010	Diode, DSF 10 C				1
D504	202-5-0220-01010	Diode, DSF 10 C				1
D505	202-5-0220-01010	Diode, DSF 10 C				1
D506	202-5-0220-01010	Diode, DSF 10 C				1
D507	202-5-3210-18011	Zener Diode, GZA 18 X				1
D508	202-5-3210-18011	Zener Diode, GZA 18 X				1
D513	202-5-0220-01010	Diode, DSF 10 C				1
D551	212-5-4550-02020	Diode, DSA 20 C				1
D552	212-5-4550-02020	Diode, DSA 20 C				1
D553	212-5-4550-02020	Diode, DSA 20 C				1
D554	212-5-4550-02020	Diode, DSA 20 C				1
Q501	203-5-8550-31350	Transistor, 2SD 313				1
Q506	203-5-5000-53660	Transistor, 2SC 536				1
Q507	203-5-7230-60860	Transistor, 2SA 608				1
Q508	203-5-7230-60860	Transistor, 2SA 608				1
	RESISTORS					
R502	RH2-7-1102-JZ003	Metal	270Ω	1W	±5%	1
R503	RH3-3-0102-JZ003	Metal	33Ω	1W	±5%	1
R505	RD1-0-2251-JM000	Carbon	1kΩ	1/4W	±5%	1
R507	RD3-3-1251-JM000	Carbon	330Ω	1/4W	±5%	1
R509	RF1-2-0251-JK000	Fuse	12Ω	1/4W	±5%	1
R510	RF2-2-0251-JK000	Fuse	22Ω	1/4W	±5%	1
R511	RF2-7-0501-JZ000	Fuse	27Ω	1/2W	±5%	1
R519	RD4-7-2251-JM000	Carbon	4.7kΩ	1/4W	±5%	1
R520	RD6-8-1251-JM000	Carbon	680Ω	1/4W	±5%	1
R521	RD4-7-4251-JM000	Carbon	470kΩ	1/4W	±5%	1
R522	RD2-2-3251-JM000	Carbon	22kΩ	1/4W	±5%	1
	POWER SWITCH P.C.B. ASSY					
50	141-0-1939-15454	Power Switch P.C.B. Assy				1
	4-2262-26340	Power Switch P.C.B.				1
	4-2352-00970	Headphone Jack 3P (Headphones)				1
SW601	⚠ 4-2312-05710	Switch Push Power (Power)				1
SW602	4-2319-77341	Switch Push 1Key (Speaker A)				1
SW603	4-2319-77341	Switch Push 1Key (Speaker B)				1
N	4-2359-79211	Connector 2P Assy				1
O	4-2439-72195	Wire 6 Parallel				1
	111-2-6220-11100	Wire Wrap Terminal				2
	131-2-6114-00200	Cover Safety				1
	CAPACITOR					
C601	⚠ 4-2239-70970	Capacitor	0.01μF	400V		1
	RESISTORS					
R601	RH5-6-1102-JZ003	Metal	560Ω	1W	±5%	1
R602	RH5-6-1102-JZ003	Metal	560Ω	1W	±5%	1
R603	RD1-5-1251-JM000	Carbon	150Ω	1/4W	±5%	1
R604	RD1-5-1251-JM000	Carbon	150Ω	1/4W	±5%	1

P.C.BOARD PARTS LIST (Continued)

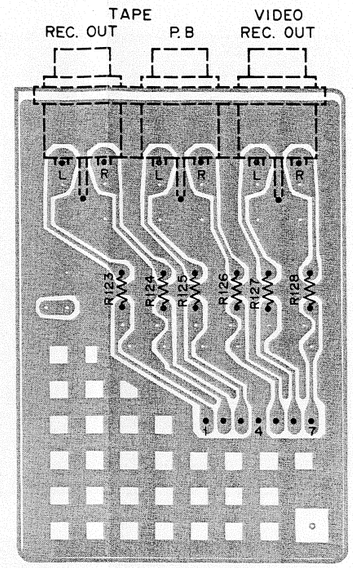
Ref. No.	Part No.	Description			Q'ty
	SPEAKER OUT P.C.B. ASSY				
51	141-0-1939-14431	Speaker Out P.C.B. Assy			1
	4-2262-26350	Speaker Out P.C.B.			1
	4-2372-00830	EC Terminal 1P			2
	4-2379-71080	8P Push Terminal (Speaker)			1
	111-2-6220-11100	Wire Wrap Terminal			2
	CAPACITORS				
C701	CC1-0-2500-KE00R	Ceramic	1000pF	50V ±10%	1
C702	CC1-0-2500-KE00R	Ceramic	1000pF	50V ±10%	1
C703	CC1-0-2500-KE00R	Ceramic	1000pF	50V ±10%	1
C704	CC1-0-2500-KE00R	Ceramic	1000pF	50V ±10%	1

NOTES:
1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

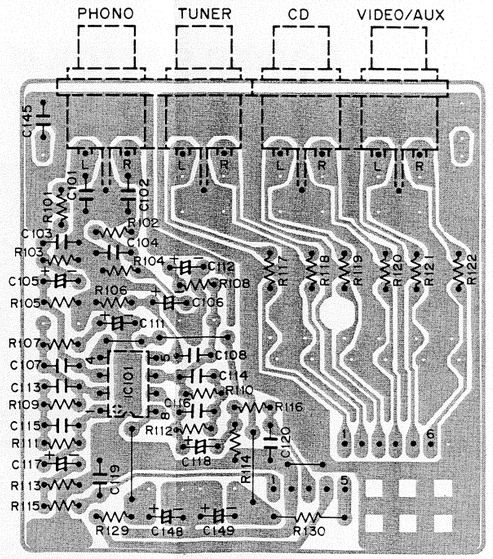
PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

INPUT 2 P.C.BOARD
(BOTTOM VIEW)



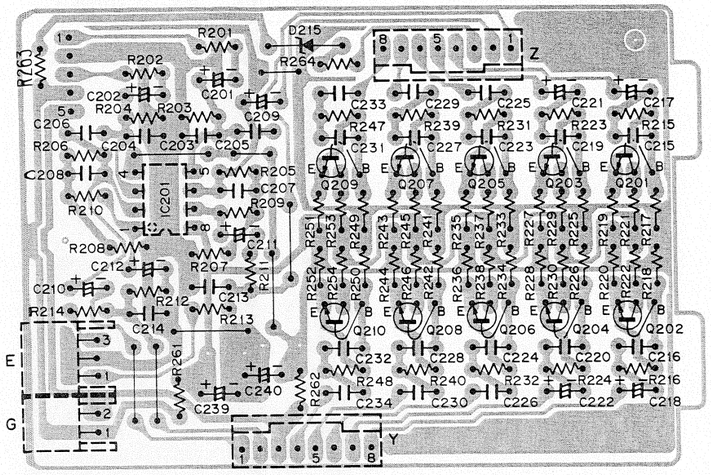
PHONO EQ. P.C.BOARD
(BOTTOM VIEW)



IC PIN NUMBERS DC VOLTAGES									
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8
IC101	NJM2068DD	0V	0V	0V	–13.5V	0V	0V	0V	12.7V

GRAPHIC EQ P.C.BOARD

(BOTTOM VIEW)

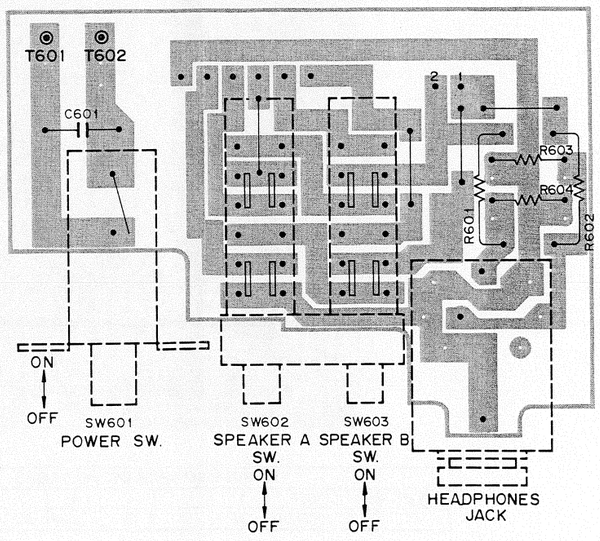


IC PIN NUMBERS DC VOLTAGES									
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8
IC201	LA6458D	0V	0V	0V	−17.4V	0V	0V	0V	16.7V

TRANSISTOR DC VOLTAGES									
SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E
Q201,202	2SC536	−0.8V	16.3V	−1.4V	Q207,208	2SC536	−0.2V	16.3V	−0.8V
Q203,204	2SC536	−0.5V	16.3V	−1.1V	Q209,210	2SC536	−0.1V	16.3V	−0.7V
Q205,206	2SC536	−0.2V	16.3V	−0.8V					

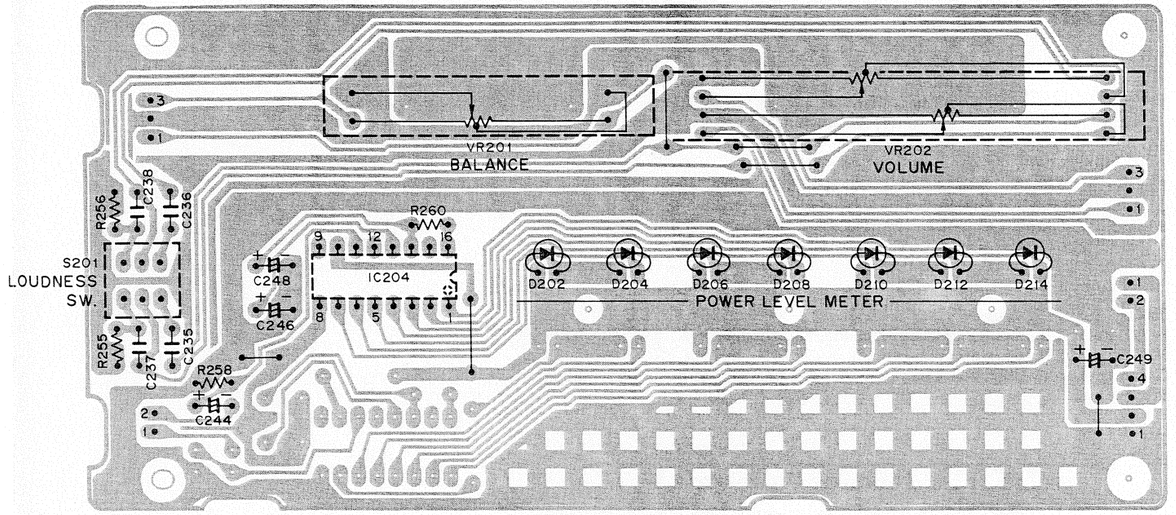
POWER SWITCH P.C.BOARD

(BOTTOM VIEW)



POWER METER P.C.BOARD

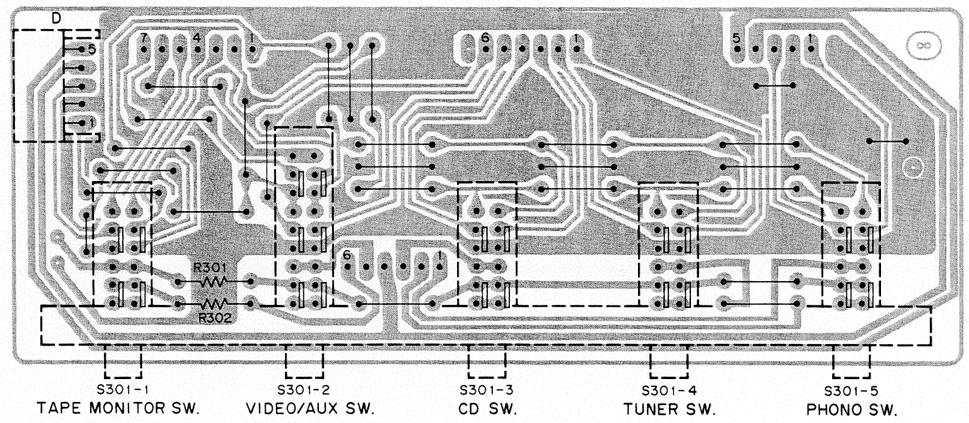
(BOTTOM VIEW)



IC PIN NUMBERS DC VOLTAGES																
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC204	IRE2E29	12.0V	13.6V	15.1V	13.6V	15.1V	13.6V	15.1V	0V	0V	16.7V	0V	0V	0V	2.6V	0V	0.9V

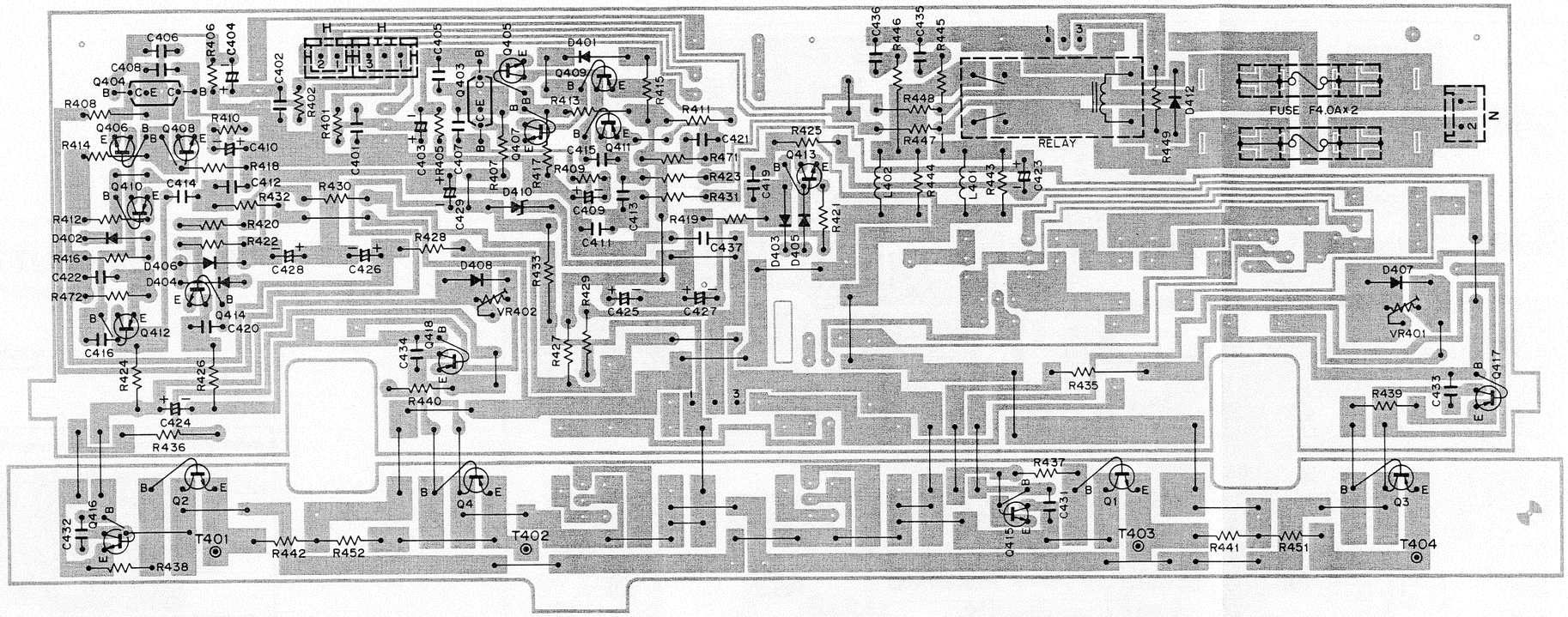
FUNCTION P.C.BOARD

(BOTTOM VIEW)



MAIN AMPLIFIER PRINTED CIRCUIT BOARD

(BOTTOM VIEW)

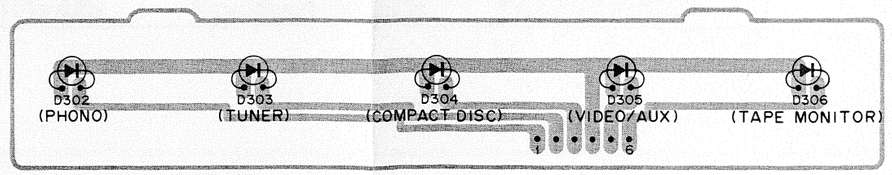


TRANSISTOR DC VOLTAGES

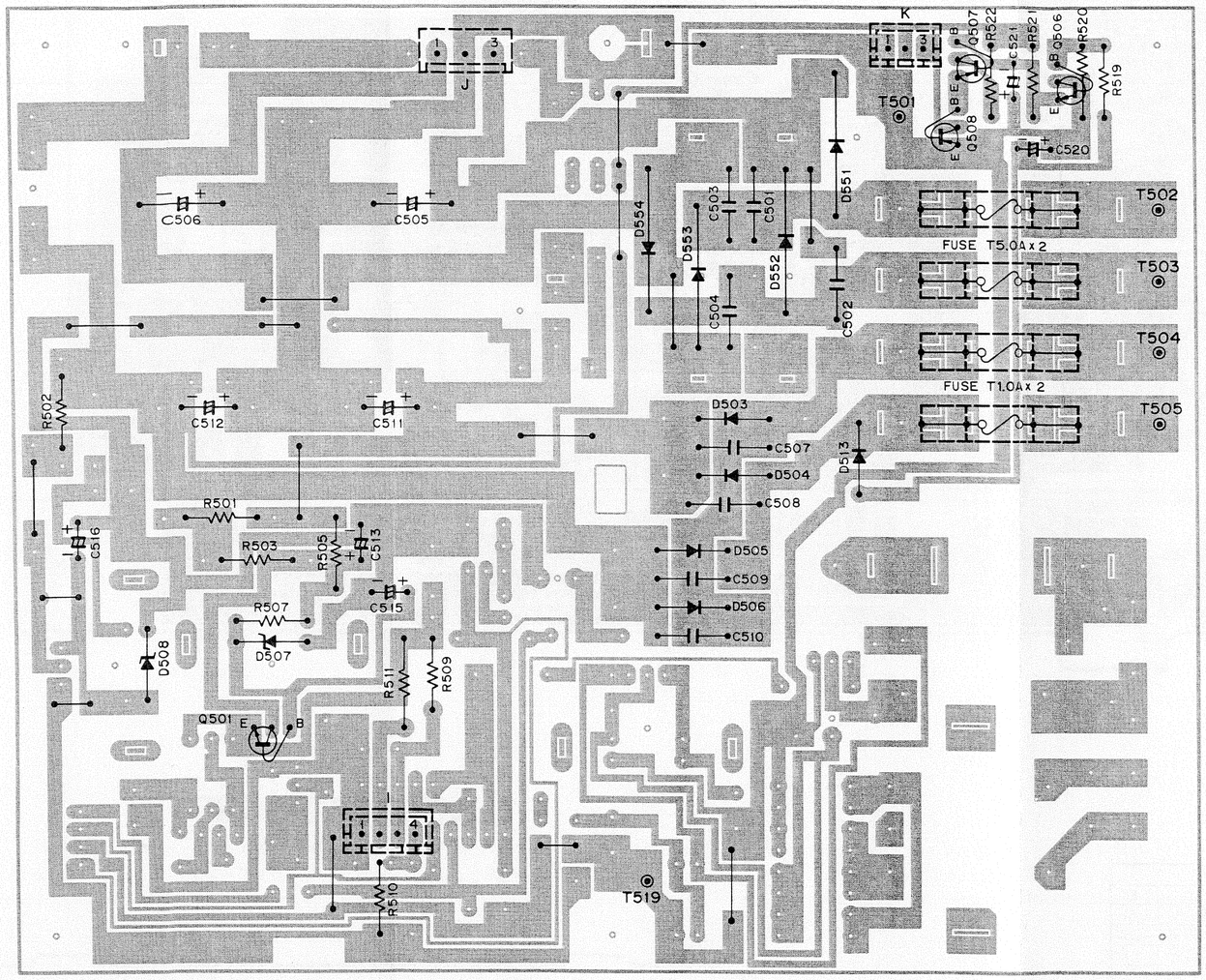
SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E
Q403,404	2SC1583	−0.1V	9.7V	−0.7V	Q415,416	2SC3117	1.2V	59.8V	0.6V
Q405,406	2SC1570	10.5V	59.1V	9.7V	Q417,418	2SA1249	−1.1V	−59.9V	−0.5V
Q407,408	2SC1570	10.5V	59.7V	9.7V	Q419	2SD947	0.1V	0.1V	−1.1V
Q409,410	2SA608	59.7V	59.1V	60.5V					
Q411,412	2SA1017	59.1V	1.5V	59.3V	Q1,2	2SC3182	0.6V	59.8V	0V
Q413,414	2SC2363	−59.0V	−1.4V	−59.7V	Q3,4	2SA1265	−0.5V	−59.6V	0V

LED P.C.BOARD

(BOTTOM VIEW)

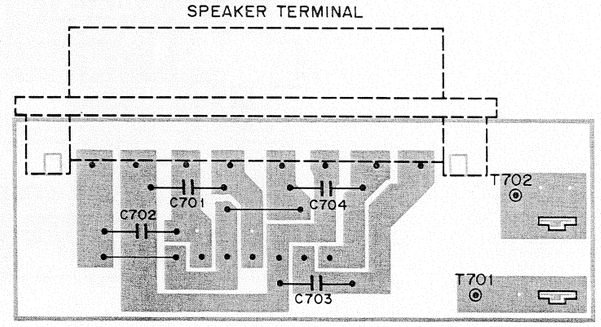


POWER SUPPLY P.C.BOARD
(BOTTOM VIEW)

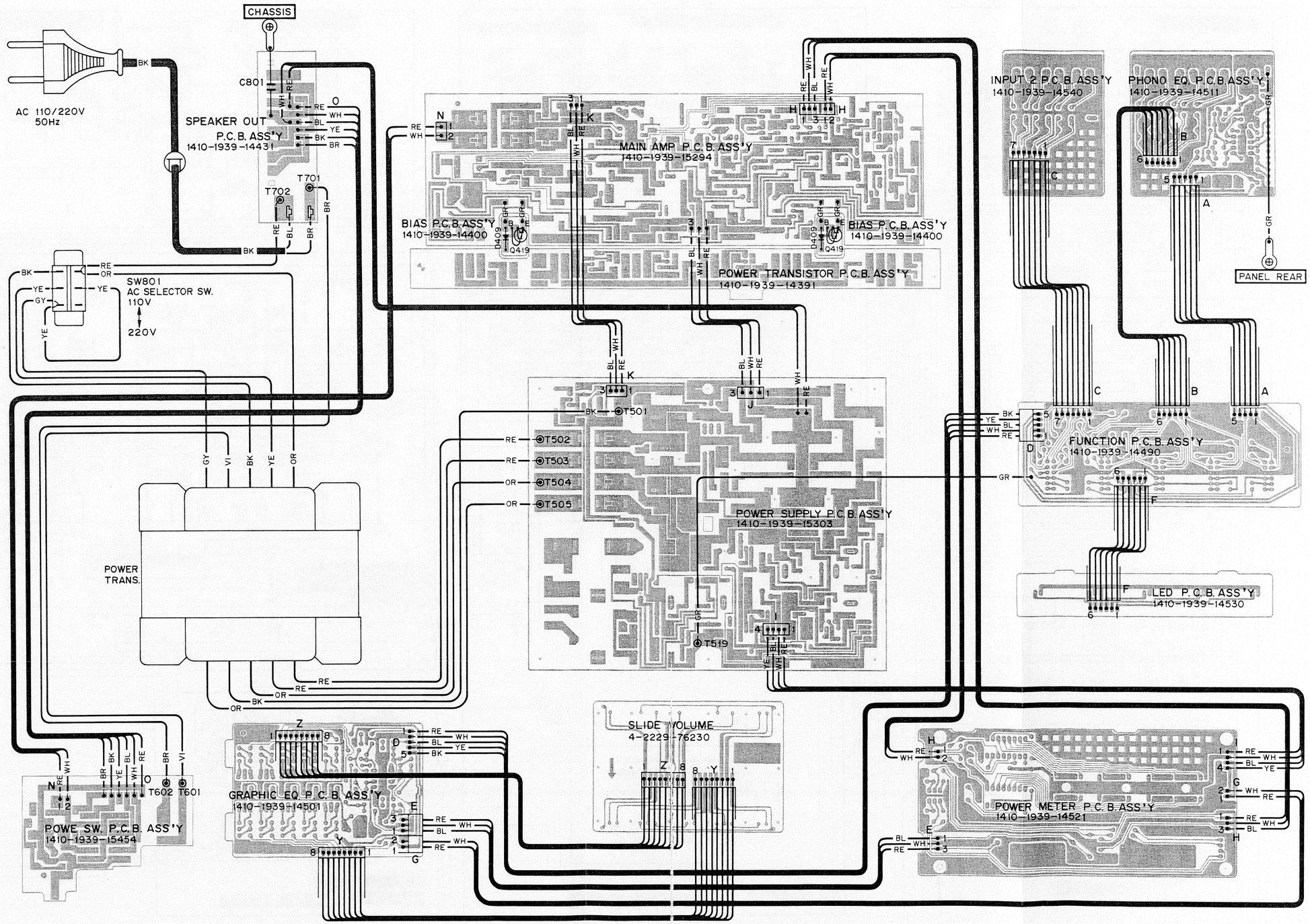


TRANSISTOR DC VOLTAGES									
SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E
Q501	2SD313	17.8V	27.7V	17.2V	Q507	2SA608	−1.4V	−0.8V	−0.8V
Q506	2SC536	−24V	0V	−1.4V	Q508	2SA608	−0.8V	0V	0V

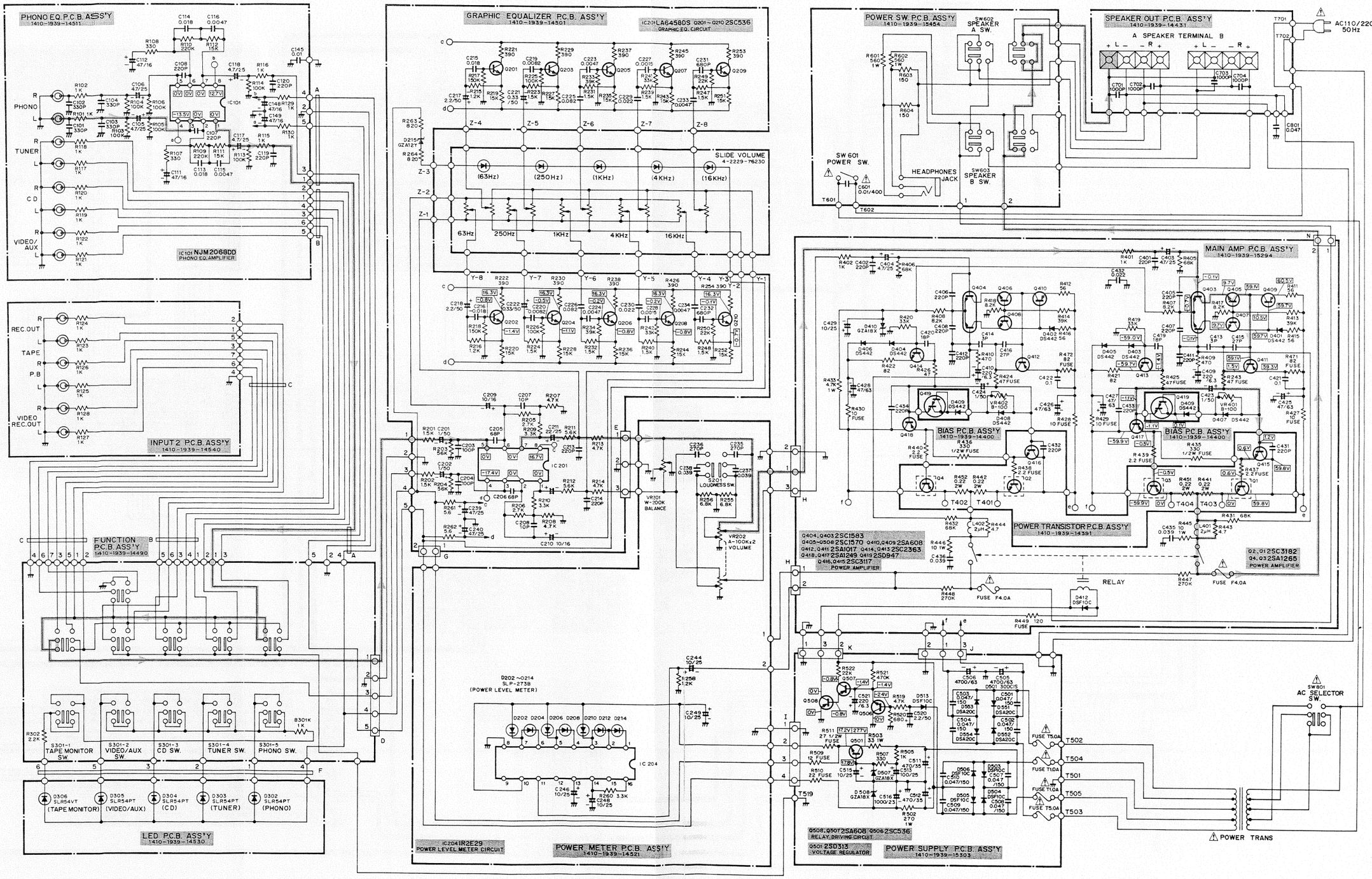
SPEAKER OUT P.C.BOARD
(BOTTOM VIEW)



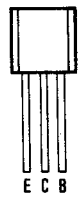
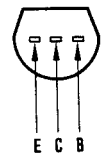
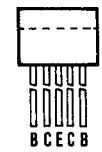
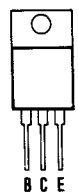
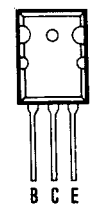
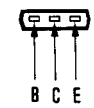
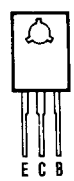
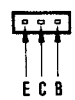
POINT TO POINT WIRING DIAGRAM



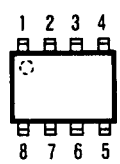
SCHEMATIC DIAGRAM



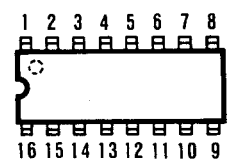
SEMICONDUCTOR LEAD IDENTIFICATION

TRANSISTOR	FRONT VIEW	BOTTOM VIEW	TRANSISTOR	FRONT VIEW	BOTTOM VIEW
2SA 608 2SC 1570 2SC 536			2SC 1583		
2SD 313			2SA1265 2SC3182		
2SA 1209 2SA 1249 2SD 947 2SA 1017 2SC 2363			TERMINAL NAME B → BASE C → COLLECTOR E → EMITTER		

NJM 2068 DD/LA 6458 D BOTTOM VIEW



IR 2E29 BOTTOM VIEW



SWITCH NAME & POSITION

No.	Name	Position	No.	Name	Position
S201	LOUDNESS Switch	OFF	S301-5	PHONO Switch	OFF
S301-1	TAPE MONITOR Switch	OFF	SW601	POWER Switch	OFF
S301-2	VIDEO/AUX Switch	OFF	SW602	SPEAKER A Switch	OFF
S301-3	CD Switch	OFF	SW603	SPEAKER B Switch	OFF
S301-4	TUNER Switch	OFF	SW801	AC SELECTOR Switch	220V

PRODUCT SAFETY NOTICE

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Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

NOTES:

1. All resistors values are indicated in "ohm" ($K=10^3$, $M=10^6$).
2. All capacitors values are indicated in "μF" ($P=10^{-12}$).
3. All voltages indicated on the schematics are measured under the following conditions.
   a. Use a V.T.V.M.
   b. All voltages ±10 % with respect to chassis ground
   c. No signals at input terminals
   d. AC input at 220 volts 50 Hz
4. This is a basic schematic diagram.

Because Fisher products are subject to continuous improvement, Fisher Corporation reserves the right to make any changes or modifications without notice.

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Sie sparen so wertvolle Zeit. Vielen Dank.

January/'86/2,000 **Printed in Japan**